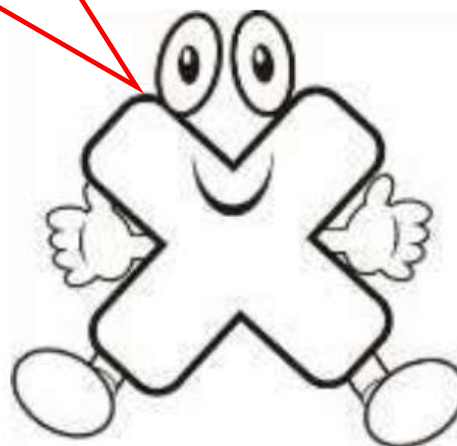
# MATHEMATICS PRIMARY FOUR SECOND TERM

## Part (1)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 × 1 = 1 | 1 × 2 = 2 | 1 × 3 = 3 | 1 × 4 = 4 | 1 × 5 = 5 | 1 × 6 = 6 | 1 × 7 = 7 | 1 × 8 = 8 | 1 × 9 = 9 | 1 × 10 = 10 | 1 × 11 = 11 | 1 × 12 = 12 |
| | 2 × 2 = 4 | 2 × 3 = 6 | 2 × 4 = 8 | 2 × 5 = 10 | 2 × 6 = 12 | 2 × 7 = 14 | 2 × 8 = 16 | 2 × 9 = 18 | 2 × 10 = 20 | 2 × 11 = 22 | 2 × 12 = 24 |
| | | 3 × 3 = 9 | 3 × 4 = 12 | 3 × 5 = 15 | 3 × 6 = 18 | 3 × 7 = 21 | 3 × 8 = 24 | 3 × 9 = 27 | 3 × 10 = 30 | 3 × 11 = 33 | 3 × 12 = 36 |
| | | | 4 × 4 = 16 | 4 × 5 = 20 | 4 × 6 = 24 | 4 × 7 = 28 | 4 × 8 = 32 | 4 × 9 = 36 | 4 × 10 = 40 | 4 × 11 = 44 | 4 × 12 = 48 |
| | | | | 5 × 5 = 25 | 5 × 6 = 30 | 5 × 7 = 35 | 5 × 8 = 40 | 5 × 9 = 45 | 5 × 10 = 50 | 5 × 11 = 55 | 5 × 12 = 60 |
| | | | | | 6 × 6 = 36 | 6 × 7 = 42 | 6 × 8 = 48 | 6 × 9 = 54 | 6 × 10 = 60 | 6 × 11 = 66 | 6 × 12 = 72 |
| | | | | | | 7 × 7 = 49 | 7 × 8 = 56 | 7 × 9 = 63 | 7 × 10 = 70 | 7 × 11 = 77 | 7 × 12 = 84 |
| | | | | | | | 8 × 8 = 64 | 8 × 9 = 72 | 8 × 10 = 80 | 8 × 11 = 88 | 8 × 12 = 96 |
| | | | | | | | | 9 × 9 = 81 | 9 × 10 = 90 | 9 × 11 = 99 | 9 × 12 = 108 |
| | | | | | | | | | 10 × 10 = 100 | 10 × 11 = 110 | 10 × 12 = 120 |
| | | | | | | | | | | 11 × 11 = 121 | 11 × 12 = 132 |
| | | | | | | | | | | | 12 × 12 = 144 |

If you do not memorize well, there is no need to continue.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 × 1 | 1 × 2 | 1 × 3 | 1 × 4 | 1 × 5 | 1 × 6 | 1 × 7 | 1 × 8 | 1 × 9 | 1 × 10 | 1 × 11 | 1 × 12 |
| | 2 × 2 | 2 × 3 | 2 × 4 | 2 × 5 | 2 × 6 | 2 × 7 | 2 × 8 | 2 × 9 | 2 × 10 | 2 × 11 | 2 × 12 |
| | | 3 × 3 | 3 × 4 | 3 × 5 | 3 × 6 | 3 × 7 | 3 × 8 | 3 × 9 | 3 × 10 | 3 × 11 | 3 × 12 |
| | | | 4 × 4 | 4 × 5 | 4 × 6 | 4 × 7 | 4 × 8 | 4 × 9 | 4 × 10 | 4 × 11 | 4 × 12 |
| | | | | 5 × 5 | 5 × 6 | 5 × 7 | 5 × 8 | 5 × 9 | 5 × 10 | 5 × 11 | 5 × 12 |
| | | | | | 6 × 6 | 6 × 7 | 6 × 8 | 6 × 9 | 6 × 10 | 6 × 11 | 6 × 12 |
| | | | | | | 7 × 7 | 7 × 8 | 7 × 9 | 7 × 10 | 7 × 11 | 7 × 12 |
| | | | | | | | 8 × 8 | 8 × 9 | 8 × 10 | 8 × 11 | 8 × 12 |
| | | | | | | | | 9 × 9 | 9 × 10 | 9 × 11 | 9 × 12 |
| | | | | | | | | | 10 × 10 | 10 × 11 | 10 × 12 |
| | | | | | | | | | | 11 × 11 | 11 × 12 |
| | | | | | | | | | | | 12 × 12 |

If you do not memorize well, there is no need to continue.

UNIT 7

Theme 2 | Mathematical Operations and Algebraic Thinking

# Unit 7
# Multiplication and Division: Computation and Relationships

# Concept (2): Dividing by 1-Digit Divisors

## Learning Targets

- I can identify the **dividend**, **divisor**, and **quotient** of a division problem.
- I can solve division problems.
- I can explain what a **remainder** represents in a division problem.

**Division Patterns** Label the parts in the equation using the words divisor, dividend, and quotient. Then, look for patterns to complete the remaining problems. The first problem in the table is an example that is filled in for you.

600 ÷ 3 = Answer

600 is called the ______________________.

3 is called the ______________________.

The answer is called the ______________________.

There were 540 crayons in a large bin. Students were asked to put 9 crayons in a small box for each student to use. How many small boxes will students need in order to complete this task?

# Put the suitable sign (<), (>) or (=):

| | | |
|---|---|---|
| 350 ÷ 7 | ………… | 450 ÷ 5 |
| 2,000 ÷ 5 | ………… | 4,000 ÷ 5 |
| 400 ÷ 4 | ………… | 1,000 ÷ 2 |
| 30,000 ÷ 6 | ………… | 20,000 ÷ 4 |
| 24,000 ÷ 8 | ………… | 20,000 ÷ 5 |
| 450 ÷ 5 | ………… | 8,100 ÷ 9 |
| 2,400 ÷ 6 | ………… | 1,500 ÷ 3 |
| 64,000 ÷ 8 | ………… | 4,800 ÷ 6 |
| 300 ÷ 5 | ………… | 400 ÷ 8 |
| 45,000 ÷ 9 | ………… | 2,500 ÷ 5 |

| Equation | Related Fact | Quotient |
|---|---|---|
| 600 ÷ 3 | 6 ÷ 3 = 2 | 200 |
| 150 ÷ 5 | | |
| 1,200 ÷ 6 | | |
| 200 ÷ 4 | | |
| 700 ÷ 7 | | |
| 6,400 ÷ 8 | | |
| 4,500 ÷ 9 | | |
| 270 ÷ 3 | | |

**Use Arrays to Divide** Draw to complete each array. Then complete the number sentence.

1. 

$8 \div 4 =$ ______

2.

$21 \div 3 =$ ______

# Partial Quotient Algorithm

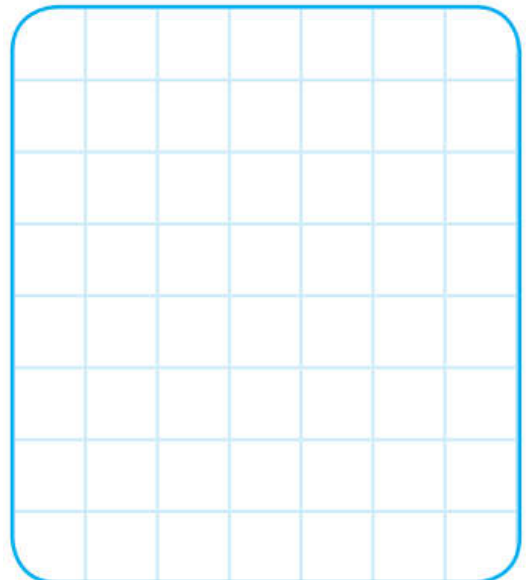
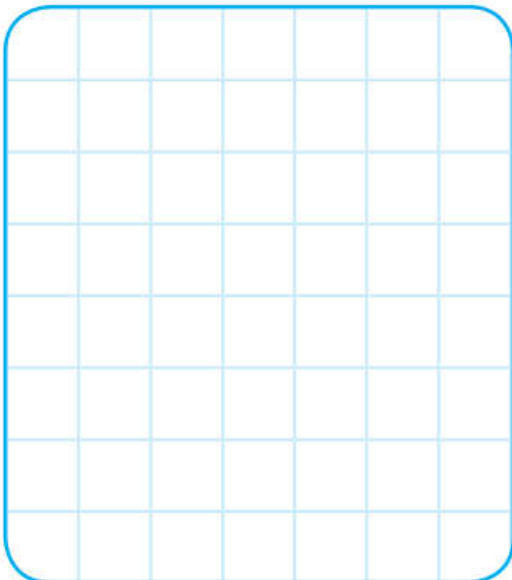
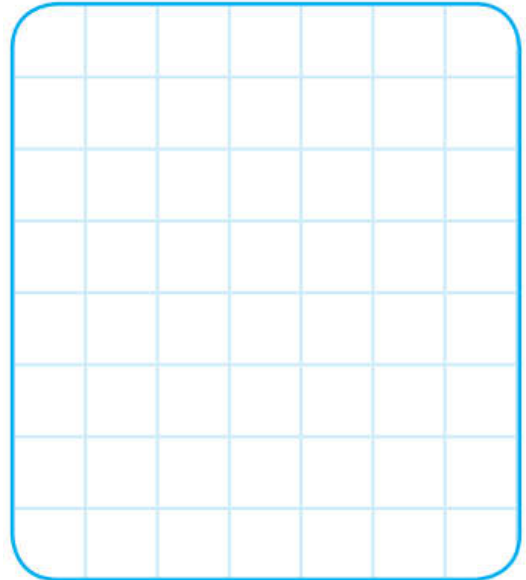
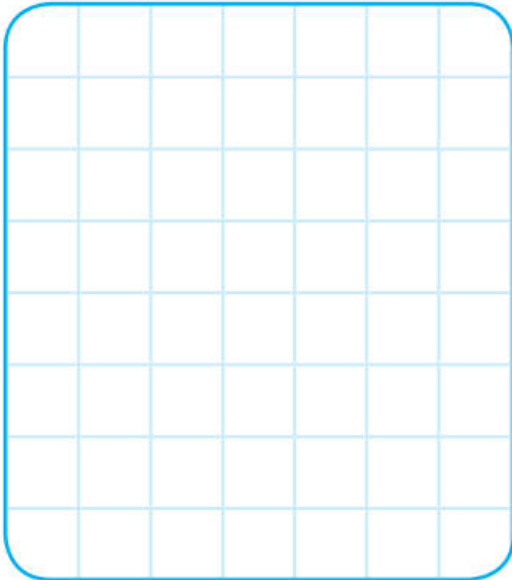
**Model Match** Write the division problem that matches each area model. Remember to include the quotient and remainder, if there is one.

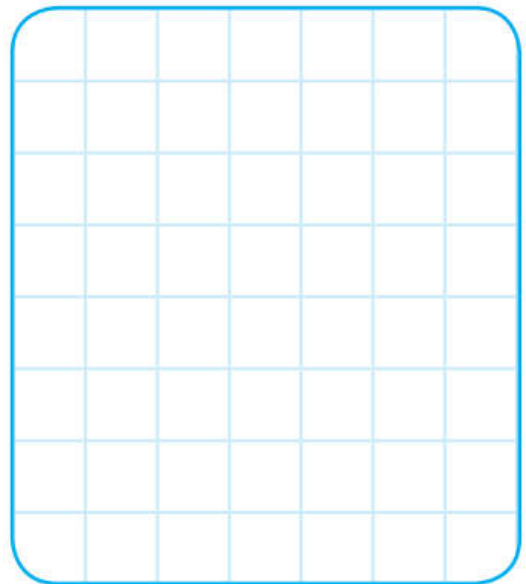
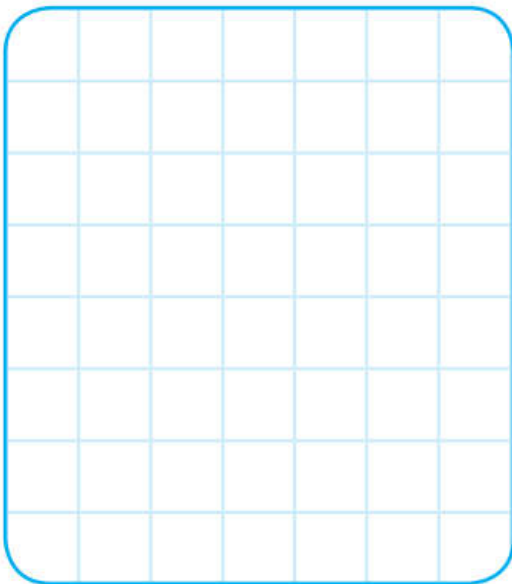
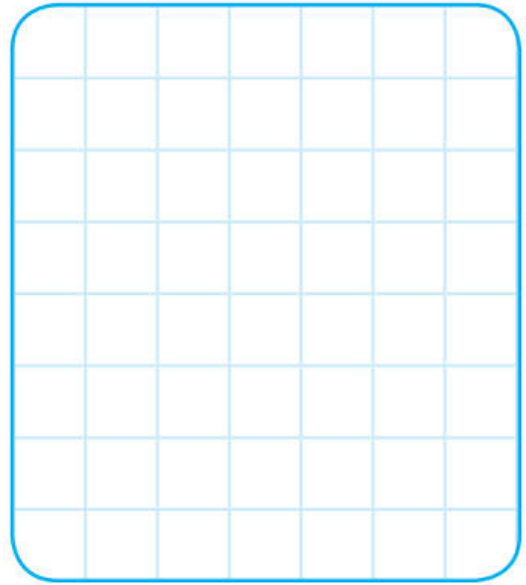
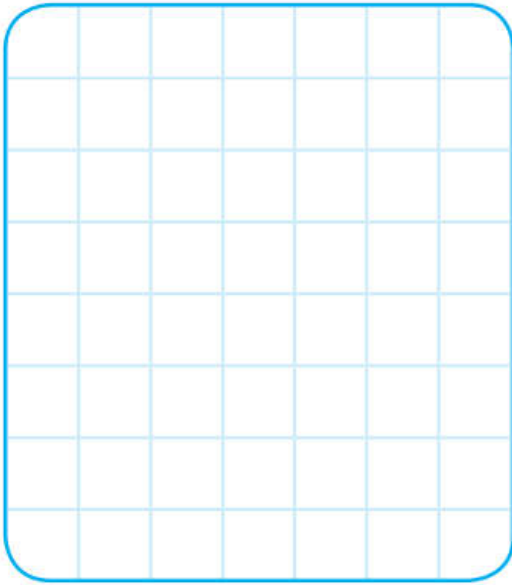
1.

| 6 | 300 | 60 | 18 |
|---|---|---|---|
| | 50 | 10 | 3 |

| 4 | 4,000 | 1,200 | 400 | 28 | |
|---|---|---|---|---|---|
| | 1,000 | 300 | 100 | 7 | R3 |

**Let's Try It** Solve the problems using the standard algorithm.

1. 454 ÷ 3
2. 778 ÷ 2
3. 368 ÷ 3
4. 4,858 ÷ 4

Solve using the standard division algorithm. Show your work.

1. 240 ÷ 6 = __________
2. 1,500 ÷ 5 = __________
3. 414 ÷ 4 = __________
4. 761 ÷ 6 = __________

Yahia placed 21 paints equally on 3 tables. How many paints were placed on each table?

**Use counters to find the quotient and remainder.**

**1.** $10 \div 3$ ______

**2.** $28 \div 5$ ______

**3.** $15 \div 6$ ______

**4.** $11 \div 3$ ______

**5.** $29 \div 4$ ______

**6.** $34 \div 5$ ______

**7.** $25 \div 3$ ______

**8.** $7\overline{)20}$ ______

GO DEEPER Alyson has 46 beads to make bracelets. Each bracelet has 5 beads. How many more beads does Alyson need so that all the beads she has are used? Explain.

______

______

______

THINK SMARTER For 13a–13d, choose Yes or No to tell whether the division expression has a remainder.

13a. $36 \div 9$ ○ Yes ○ No

13b. $25 \div 3$ ○ Yes ○ No

13c. $82 \div 9$ ○ Yes ○ No

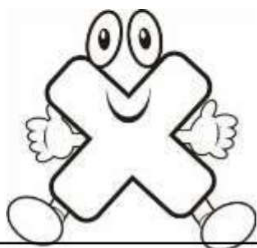
13d. $28 \div 7$ ○ Yes ○ No

**Use basic facts and place value to find the quotient.**

**3.** $360 \div 6 =$ ______

**4.** $2,000 \div 5 =$ ______

**5.** $4,500 \div 9 =$ ______

# Homework

## MULTIPLICATION

| | | |
|---|---|---|
| 1 × 3 = ☐ | 1 × 5 = ☐ | 1 × 4 = ☐ |
| 1 × 6 = ☐ | 1 × 0 = ☐ | 1 × 7 = ☐ |
| 1 × 2 = ☐ | 1 × 1 = ☐ | 1 × 9 = ☐ |

| | | |
|---|---|---|
| 2 × 6 = ☐ | 2 × 8 = ☐ | 2 × 5 = ☐ |
| 2 × 3 = ☐ | 2 × 1 = ☐ | 2 × 0 = ☐ |
| 2 × 4 = ☐ | 2 × 7 = ☐ | 2 × 2 = ☐ |

| | | |
|---|---|---|
| 1 × 8 = ☐ | 2 × 5 = ☐ | 2 × 7 = ☐ |
| 2 × 4 = ☐ | 1 × 9 = ☐ | 1 × 6 = ☐ |
| 2 × 3 = ☐ | 2 × 1 = ☐ | 1 × 4 = ☐ |

| | | |
|---|---|---|
| 2 × 2 = ☐ | 2 × 6 = ☐ | 1 × 7 = ☐ |
| 1 × 5 = ☐ | 1 × 3 = ☐ | 2 × 8 = ☐ |
| 1 × 2 = ☐ | 1 × 1 = ☐ | 2 × 9 = ☐ |

2. 3200 ÷ 8 = ______________

3. 67 ÷ 3 = ______________

4. 455 ÷ 4 = ______________

**Use basic facts and place value to find the quotient.**

| | | |
|---|---|---|
| **6.** 560 ÷ 8 = ______ | **7.** 200 ÷ 5 = ______ | **8.** 240 ÷ 4 = ______ |
| **9.** 810 ÷ 9 = ______ | **10.** 6,400 ÷ 8 = ______ | **11.** 3,500 ÷ 7 = ______ |
| **12.** 5,000 ÷ 5 = ______ | **13.** 9,000 ÷ 3 = ______ | **14.** 3,000 ÷ 5 = ______ |

**24.** THINK SMARTER Which quotients are equal to 20? Mark all that apply.

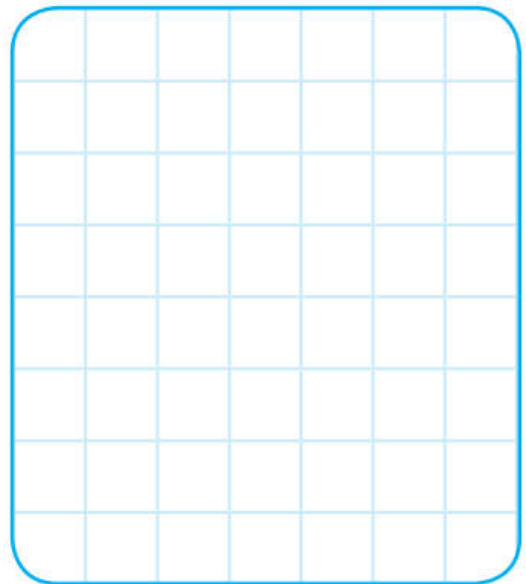
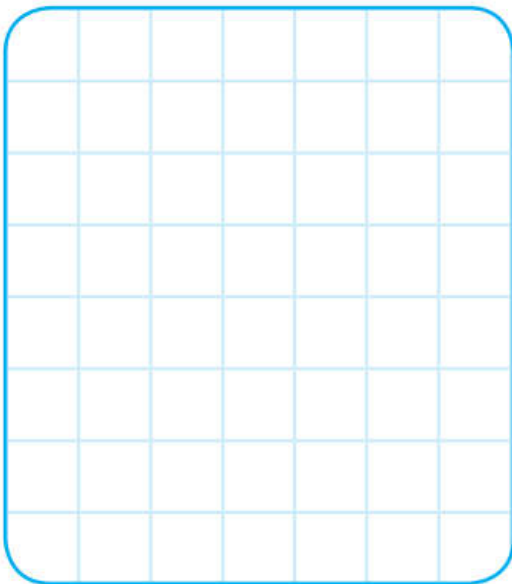
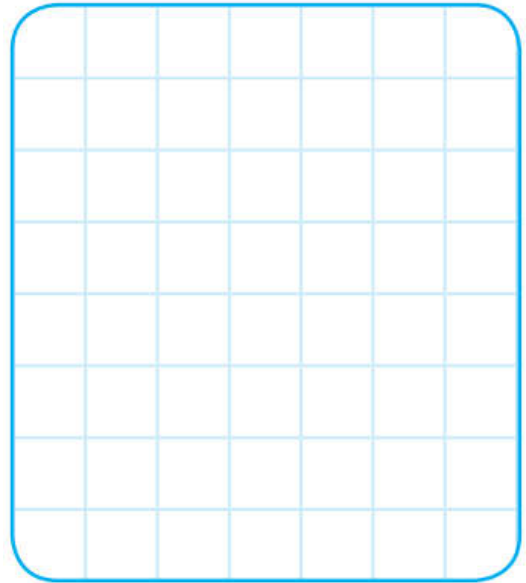
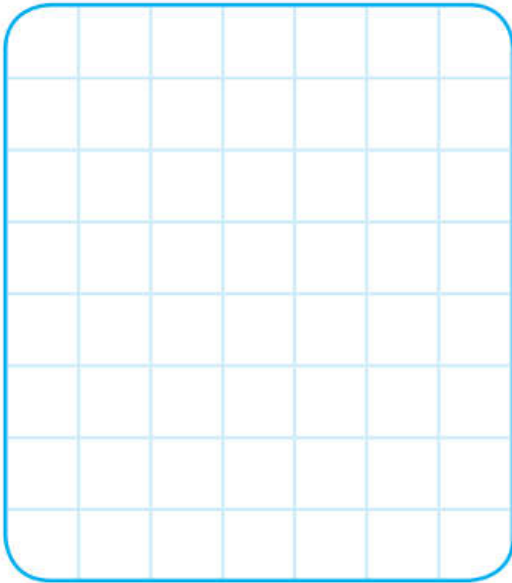
- Ⓐ 600 ÷ 2
- Ⓑ 1,200 ÷ 6
- Ⓒ 180 ÷ 9
- Ⓓ 140 ÷ 7
- Ⓔ 500 ÷ 5

Solve the problems.

a. $27 \div 5 =$ ____________

b. $156 \div 4 =$ ____________

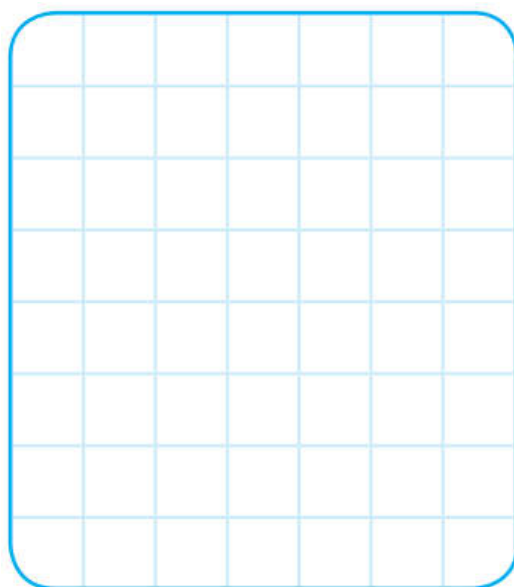
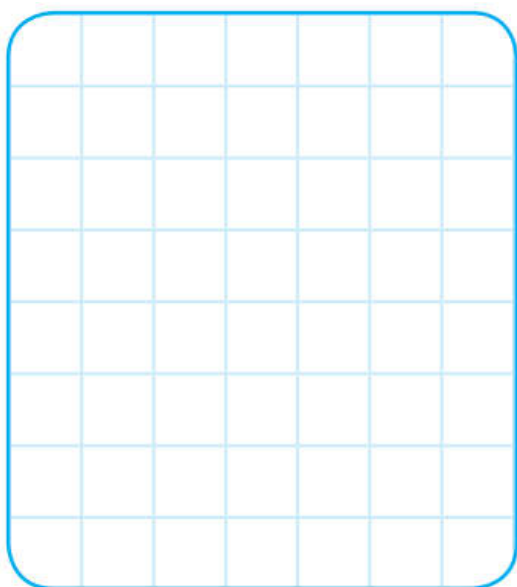
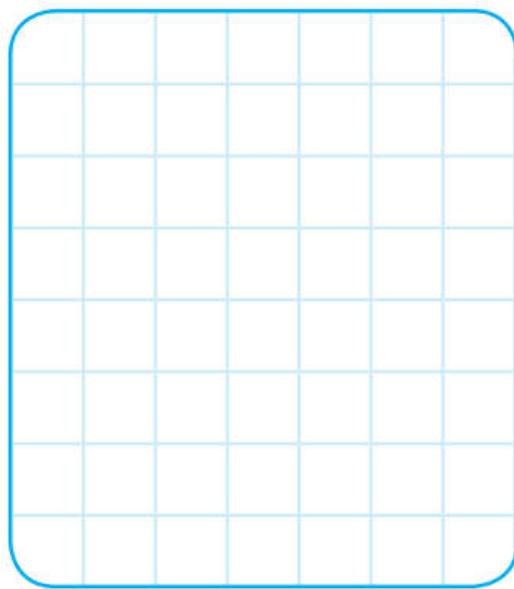
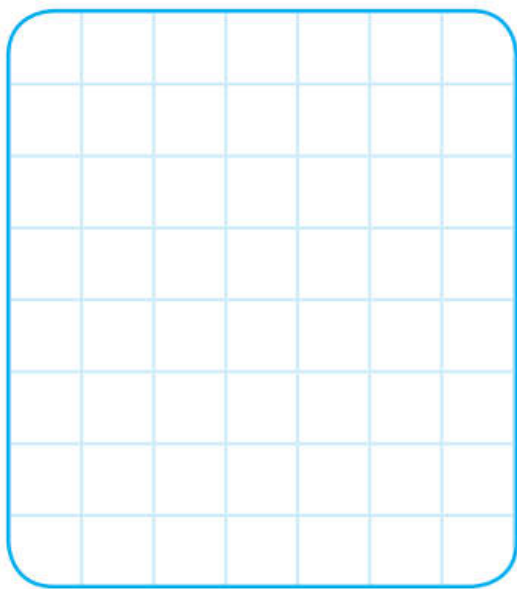
c. $2{,}704 \div 3 =$ ____________

d. $583 \div 6 =$ ____________

**Divide. Use partial quotients.**

**4.** $9\overline{)198}$

**5.** $7\overline{)259}$

**6.** $8\overline{)864}$

**7.** $6\overline{)738}$

UNIT
8

Theme 2 | Mathematical Operations and Algebraic Thinking

# Unit 8
# Order of Operations

# Order of Operations

Parentheses

Multiplication and Division (left-to-right)

Addition and Subtraction (left-to-right)

| **Groupings** | **Exponents** | **Multiply/Divide** (Left to Right) | **Subtract/Add** (Left to Right) |
|---|---|---|---|
| ( ) { } [ ] | $n^2$ | ÷ / × | + − |

$4 + 10 \div 2$

$4 + 5$

$4 + 5$

$9$

**1.**

+ + = 12

+ + = 18

+ + = 26

+ x = ______

**2.**

+ + = 18

+ + = 23

+ + = 17

x + = ______

| $3 + 6 \div 3$<br>$= 3 + 2$<br>$= 5$ | $9 \div 3 + 6$<br>$= 3 + 6$<br>$= 9$ | $7 \times 2 + 4$<br>$= 14 + 4$<br>$= 18$ | $5 + 3 \times 4$<br>$= 5 + 12$<br>$= 17$ |
|---|---|---|---|
| $9 - 6 \div 2$<br>$= 9 - 3$<br>$= 6$ | $8 \div 4 - 2$<br>$= 2 - 2$<br>$= 0$ | $5 \times 3 - 7$<br>$= 15 - 7$<br>$= 8$ | $9 - 4 \times 2$<br>$= 9 - 8$<br>$= 1$ |

Follow the standard order of operations to solve.

1. $8 \times 2 + 13 =$ ______
2. $5 \times 6 - 12 =$ ______
3. $200 - 80 \times 2 =$ ______
4. $5 + 8 \div 2 =$ ______
5. $20 \div 5 + 5 =$ ______

**Which Does Not Belong?** Solve the problems. Then, think about which problem does not belong in the set. Highlight or circle the problem you think does not belong and explain your thinking.

1. $6 \times 4 - 4 =$ ______________
2. $100 - 80 \times 1 =$ ______________
3. $60 + 20 - 50 =$ ______________
4. $2,356 - 2,336 =$ ______________

Solve the problems. Show your work.

1. 18 x 2 + 8 – 3 = ____________
2. 73 – 60 + 15 ÷ 3 = ____________
3. 4 + 4 + 5 x 10 = ____________
4. 80 ÷ 8 – 7 = ____________

| | | | | | | |
|---|---|---|---|---|---|---|
| | + | | + | | = | 24 |
| | + | | | | = | 12 |
| | + | | + | | = | 12 |
| | + | | ÷ | | = | …….. |

$8 \times 5 + 7 =$ ..........

$=$ ..........

$4 \times 8 - 5 =$ ..........

$=$ ..........

$7 + 2 \times 9 =$ ..........

$=$ ..........

$12 - 3 \times 3 =$ ..........

$=$ ..........

$7 + 8 \div 2 =$ ..........

$=$ ..........

$48 \div 8 + 5 =$ ..........

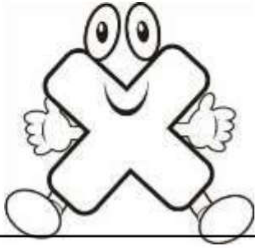
$=$ ..........

$36 \div 9 - 3 =$ ..........

$=$ ..........

$12 - 10 \div 2 =$ ..........

$=$ ..........

# Homework

## MULTIPLICATION

| | | |
|---|---|---|
| 3 × 3 = ☐ | 3 × 5 = ☐ | 3 × 4 = ☐ |
| 3 × 6 = ☐ | 3 × 0 = ☐ | 3 × 7 = ☐ |
| 3 × 2 = ☐ | 3 × 1 = ☐ | 3 × 9 = ☐ |

| | | |
|---|---|---|
| 2 × 7 = ☐ | 2 × 3 = ☐ | 2 × 4 = ☐ |
| 2 × 8 = ☐ | 2 × 2 = ☐ | 2 × 1 = ☐ |
| 2 × 5 = ☐ | 2 × 6 = ☐ | 2 × 0 = ☐ |

| | | |
|---|---|---|
| 2 × 8 = ☐ | 3 × 5 = ☐ | 2 × 7 = ☐ |
| 2 × 4 = ☐ | 2 × 9 = ☐ | 3 × 6 = ☐ |
| 3 × 3 = ☐ | 3 × 1 = ☐ | 3 × 4 = ☐ |

| | | |
|---|---|---|
| 2 × 2 = ☐ | 2 × 6 = ☐ | 3 × 7 = ☐ |
| 2 × 5 = ☐ | 2 × 3 = ☐ | 3 × 8 = ☐ |
| 3 × 2 = ☐ | 3 × 1 = ☐ | 3 × 9 = ☐ |

= 27

= 12

\+ = 6

\+ ÷ = ........

= 30

\+ = 14

\+ + = 9

\+ - = ........

$9 \times 4 + 14 =$ ..............................................................

$=$ ..............................................................

$4 \times 8 - 9 =$ ..............................................................

$=$ ..............................................................

$6 + 3 \times 2 =$ ..............................................................

$=$ ..............................................................

$25 - 3 \times 7 =$ ..............................................................

$=$ ..............................................................

$6 + 18 \div 3 =$ ..............................................................

$=$ ..............................................................

$63 \div 7 + 21 =$ ..............................................................

$=$ ..............................................................

$42 \div 7 - 5 =$ ..............................................................

$=$ ..............................................................

$15 - 14 \div 7 =$ ..............................................................

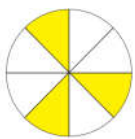
$=$ ..............................................................

UNIT
9

Theme 3 | Fractions, Decimals, and Proportional Relationships

# Unit 9
# Fractions

# Concept (1): Composing and Decomposing Fractions

$\frac{3}{8}$

- Numerator (number of shaded parts)
- Denominator (number of all parts)

| The figure | No. of equal parts | No. of shaded parts | Fraction form | Word form |
|---|---|---|---|---|
| | 2 | 1 | $\frac{1}{2}$ | One Half |
| | 3 | 1 | $\frac{1}{3}$ | One Third |
| | 4 | 1 | $\frac{1}{4}$ | One Fourth |
| | 5 | 1 | $\frac{1}{5}$ | One Fifth |
| | 6 | 1 | $\frac{1}{6}$ | One Sixth |
| | 7 | 1 | $\frac{1}{7}$ | One Seventh |
| | 8 | 1 | $\frac{1}{8}$ | One eighth |

## Complete the following table:

| | Numerator | Denominator | The Fraction | Word form |
|---|---|---|---|---|
| 1 | 1 | 2 | $\frac{......}{......}$ | ............................................................ |
| 2 | 2 | ......... | $\frac{......}{7}$ | ............................................................ |
| 3 | ......... | 3 | $\frac{2}{......}$ | ............................................................ |
| 4 | ......... | ......... | $\frac{5}{8}$ | ............................................................ |
| 5 | ......... | ......... | $\frac{......}{......}$ | Seven ninths |

## Write the fraction that represents the shaded part:

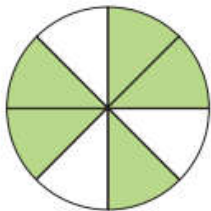
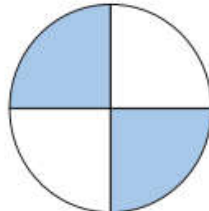
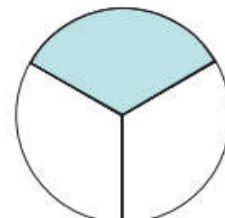
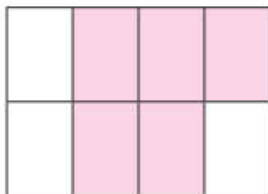
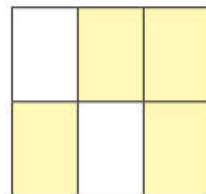
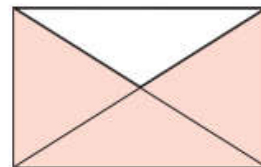
$\frac{......}{......}$ ............................................

$\frac{......}{......}$ ............................................

$\frac{......}{......}$ ............................................

$\frac{......}{......}$ ............................................

$\frac{......}{......}$ ............................................

$\frac{......}{......}$ ............................................

## Complete:

$$\frac{1}{5}+\frac{1}{5}+\frac{1}{5}=\frac{\dots}{\dots}$$

$$\frac{1}{7}+\frac{1}{7}+\frac{1}{7}+\frac{1}{7}=\frac{\dots}{\dots}$$

$$\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}=\frac{\dots}{\dots}$$

$$\frac{1}{4}+\frac{1}{4}=\frac{\dots}{\dots}$$

## Decomposing Fractions

| $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ |
|---|---|---|---|
| $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ |

$$\frac{5}{8}=\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}$$

$$\frac{5}{6}$$

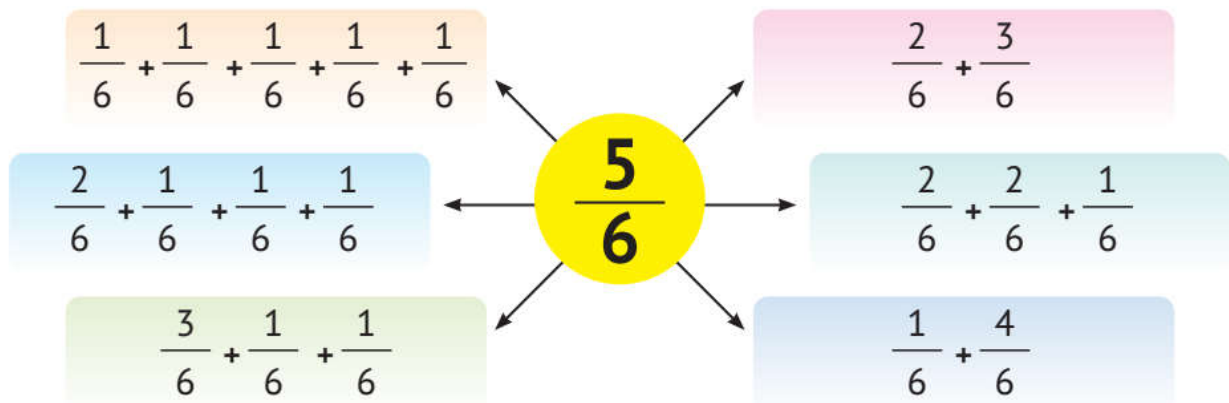
$$\frac{1}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}$$

$$\frac{2}{6}+\frac{3}{6}$$

$$\frac{2}{6}+\frac{1}{6}+\frac{1}{6}+\frac{1}{6}$$

$$\frac{2}{6}+\frac{2}{6}+\frac{1}{6}$$

$$\frac{3}{6}+\frac{1}{6}+\frac{1}{6}$$

$$\frac{1}{6}+\frac{4}{6}$$

## Decompose the following fractions:

$\frac{4}{5}$ = ........................ + ........................ + ........................ + ........................

$\frac{3}{8}$ = ..............................................................................................................

$\frac{2}{6}$ = ..............................................................................................................

## Decompose the following fractions in two different ways:

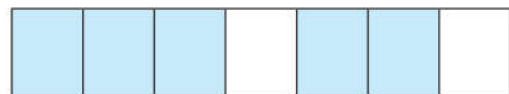
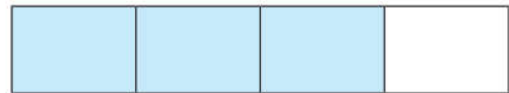
1. $\frac{3}{4} = \frac{\dots\dots}{\dots\dots} + \frac{\dots\dots}{\dots\dots} + \frac{\dots\dots}{\dots\dots}$

2. $\frac{3}{4} = \frac{\dots\dots}{\dots\dots} + \frac{\dots\dots}{\dots\dots}$

1. $\frac{4}{5} = \frac{\dots\dots}{\dots\dots} + \frac{\dots\dots}{\dots\dots} + \frac{\dots\dots}{\dots\dots}$

2. $\frac{4}{5} = \frac{\dots\dots}{\dots\dots} + \frac{\dots\dots}{\dots\dots}$

## Match:

$\frac{1}{3} + \frac{1}{3}$ •  • 

$\frac{3}{7} + \frac{2}{7}$ •  •

$\frac{1}{4} + \frac{2}{4}$ •  •

## Proper fraction:

Is just a fraction where its numerator is less than its denominator, such as: $\frac{1}{5}$ , $\frac{2}{3}$ , $\frac{5}{7}$ , $\frac{10}{21}$ , ... *etc.*

## Improper fraction:

Is just a fraction where its numerator is more than or equal to its denominator, such as: $\frac{7}{5}$ , $\frac{5}{3}$ , $\frac{7}{7}$ , $\frac{11}{2}$ , ... *etc.*

## Mixed number:

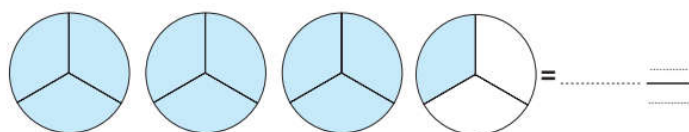
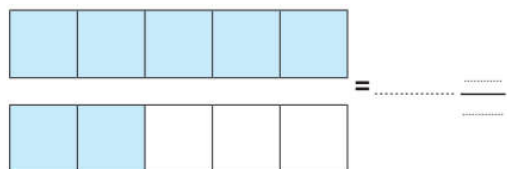
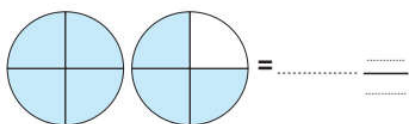
Is a number consisting of a whole number and a proper fraction, such as: $3\frac{1}{5}$ , $4\frac{2}{3}$ , $2\frac{5}{7}$ , $6\frac{11}{12}$ , ... *etc.*

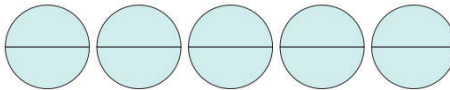
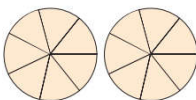
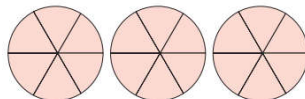
## Write the mixed number that represents the figure:

= .................. $\frac{\dots}{\dots}$

= .................. $\frac{\dots}{\dots}$

= .................. $\frac{\dots}{\dots}$

= .................. $\frac{\dots}{\dots}$

## Match:

| | | |
|---|---|---|
| $\frac{5}{5}$ • | • proper fraction • | • $\frac{9}{7}$ |
| $3\frac{5}{8}$ • | • improper fraction • | • $\frac{3}{13}$ |
| $\frac{5}{7}$ • | • mixed number • | • $2\frac{5}{7}$ |

# The fractional form of the whole number:

$\frac{10}{2} = 5 \rightarrow 10 \div 2 = 5$

$\frac{14}{7} = 2 \rightarrow 14 \div 7 = 2$

$\frac{18}{6} = 3 \rightarrow 18 \div 6 = 3$

## Complete:

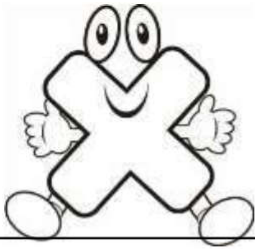
1. $2 = \frac{....}{5} = \frac{4}{....} = \frac{....}{....}$
2. $1 = \frac{....}{5} = \frac{4}{....} = \frac{....}{....}$
3. $3 = \frac{....}{5} = \frac{12}{....} = \frac{....}{....}$
4. $4 = \frac{....}{2} = \frac{20}{....} = \frac{....}{....}$
5. $5 = \frac{....}{5} = \frac{15}{....} = \frac{....}{....}$
6. $6 = \frac{....}{3} = \frac{24}{....} = \frac{....}{....}$
7. $8 = \frac{....}{2} = \frac{40}{....} = \frac{....}{....}$
8. $9 = \frac{....}{3} = \frac{36}{....} = \frac{....}{....}$
9. $7 = \frac{....}{5} = \frac{21}{....} = \frac{....}{....}$

## Write each of the following as an improper fraction:

1. $3\frac{1}{2} = \frac{....}{....}$
2. $3\frac{2}{3} = \frac{....}{....}$
3. $2\frac{3}{4} = \frac{....}{....}$
4. $5\frac{1}{2} = \frac{....}{....}$
5. $2\frac{3}{5} = \frac{....}{....}$
6. $8\frac{1}{2} = \frac{....}{....}$
7. $5\frac{1}{4} = \frac{....}{....}$
8. $6\frac{2}{3} = \frac{....}{....}$
9. $4\frac{3}{10} = \frac{....}{....}$

## Write each of the following as a mixed number:

1. $\frac{5}{2} = .... \frac{....}{....}$
2. $\frac{7}{3} = .... \frac{....}{....}$
3. $\frac{9}{4} = .... \frac{....}{....}$
4. $\frac{9}{2} = .... \frac{....}{....}$
5. $\frac{13}{5} = .... \frac{....}{....}$
6. $\frac{17}{2} = .... \frac{....}{....}$
7. $\frac{15}{4} = .... \frac{....}{....}$
8. $\frac{22}{3} = .... \frac{....}{....}$
9. $\frac{31}{10} = .... \frac{....}{....}$

# Homework

## MULTIPLICATION

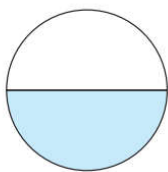
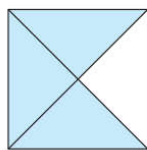
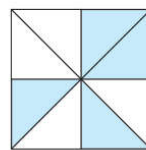
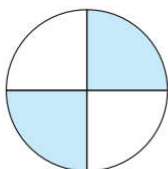
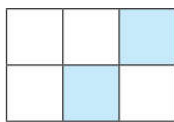
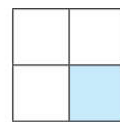
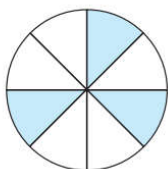
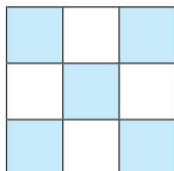
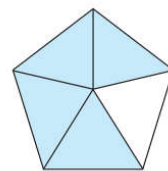
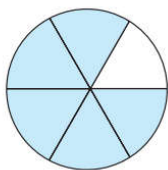
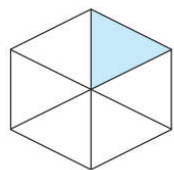
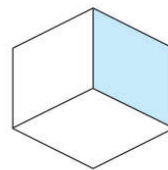
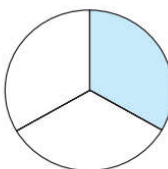
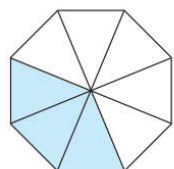
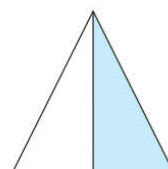
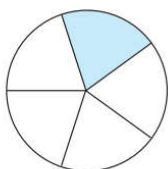
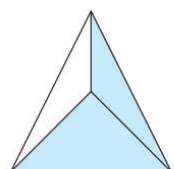
| | | |
|---|---|---|
| $4 \times 7 =$ ☐ | $4 \times 3 =$ ☐ | $4 \times 4 =$ ☐ |
| $4 \times 8 =$ ☐ | $4 \times 2 =$ ☐ | $4 \times 1 =$ ☐ |
| $4 \times 5 =$ ☐ | $4 \times 6 =$ ☐ | $4 \times 0 =$ ☐ |

| | | |
|---|---|---|
| $5 \times 3 =$ ☐ | $5 \times 5 =$ ☐ | $5 \times 4 =$ ☐ |
| $5 \times 6 =$ ☐ | $5 \times 0 =$ ☐ | $5 \times 7 =$ ☐ |
| $5 \times 2 =$ ☐ | $5 \times 1 =$ ☐ | $5 \times 9 =$ ☐ |

| | | |
|---|---|---|
| $4 \times 2 =$ ☐ | $5 \times 6 =$ ☐ | $5 \times 7 =$ ☐ |
| $4 \times 5 =$ ☐ | $4 \times 3 =$ ☐ | $4 \times 8 =$ ☐ |
| $5 \times 2 =$ ☐ | $5 \times 1 =$ ☐ | $5 \times 9 =$ ☐ |

| | | |
|---|---|---|
| $4 \times 8 =$ ☐ | $5 \times 5 =$ ☐ | $4 \times 7 =$ ☐ |
| $4 \times 4 =$ ☐ | $4 \times 9 =$ ☐ | $4 \times 6 =$ ☐ |
| $5 \times 3 =$ ☐ | $4 \times 1 =$ ☐ | $5 \times 4 =$ ☐ |

# Write the fraction that represents the shaded part:

| | | |
|---|---|---|
| $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ |
| $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ |
| $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ |
| $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ |
| $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ |
| $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ | $\frac{\dots\dots}{\dots\dots}$ ................ |

# Write the fraction, then decompose it:

$\frac{\dots\dots}{\dots\dots}$ = .......... + .......... + ..........

$\frac{\dots\dots}{\dots\dots}$ = .......... + .......... + .......... + ..........

$\frac{\dots\dots}{\dots\dots}$ = .......... + ..........

$\frac{\dots\dots}{\dots\dots}$ = .......... + .......... + .......... + .......... + ..........

$\frac{\dots\dots}{\dots\dots}$ = .......... + .......... + .......... + ..........

$\frac{\dots\dots}{\dots\dots}$ = .......... + .......... + .......... + ..........

$\frac{\dots\dots}{\dots\dots}$ = .......... + .......... + ..........

$\frac{\dots\dots}{\dots\dots}$ = .......... + .......... + .......... + .......... + ..........

# Decompose the following fractions:

$\frac{2}{3}$ = ……………………………………………………

$\frac{3}{4}$ = ……………………………………………………

$\frac{2}{4}$ = ……………………………………………………

$\frac{4}{5}$ = ……………………………………………………

$\frac{3}{5}$ = ……………………………………………………

$\frac{5}{6}$ = ……………………………………………………

$\frac{4}{7}$ = ……………………………………………………

$1 = \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots}$

$1 = \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots}$

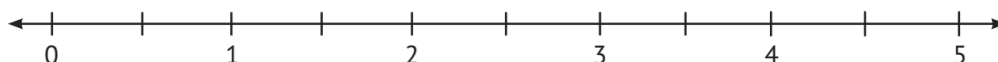
$1 = \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots}$

$1 = \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots} + \frac{\cdots}{\cdots}$

## Decompose the following fractions in two different ways:

| Way 1 | Way 2 |
|---|---|
| $\frac{5}{7} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$ | $\frac{5}{7} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$ |
| $\frac{5}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$ | $\frac{5}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$ |
| $\frac{6}{9} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$ | $\frac{6}{9} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$ |
| $\frac{6}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$ | $\frac{6}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$ |
| $\frac{7}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$ | $\frac{7}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$ |
| $\frac{8}{9} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$ | $\frac{8}{9} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$ |

## Put each fraction in its suitable place on the number line:

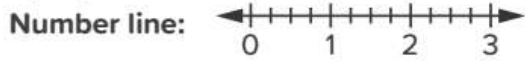
a) $4\frac{1}{2}$ ، $1\frac{1}{2}$ ، $\frac{8}{2}$ ، $3\frac{1}{2}$ ، $2\frac{1}{2}$

b)

$4\frac{1}{3}$ ، $1\frac{2}{3}$ ، $2\frac{2}{3}$ ، $3\frac{1}{3}$ ، $\frac{2}{3}$

c) $\frac{15}{5}$ ، $1\frac{3}{5}$ ، $2\frac{4}{5}$ ، $1\frac{1}{5}$ ، $\frac{3}{5}$

# Adding & Subtracting Mixed Numbers

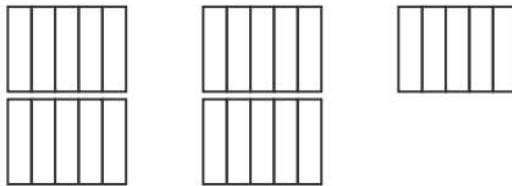
**Mixed Together** Add the mixed numbers. Solve each problem using a number line, a model, and an equation. For each model, color the first fraction one color and use a different color for the second fraction.

1. $1\frac{1}{4} + \frac{3}{4}$

**Number line:**

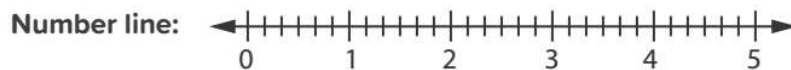
**Model:**

**Equation:** ____________________

2. $2\frac{1}{5} + 1\frac{2}{5}$

**Number line:**

**Model:**

**Equation:** ____________________

3. $2\frac{1}{6} + 1\frac{5}{6}$

**Number line:**

**Model:**

**Equation:** ____________________

**Mixed Apart** Subtract the mixed numbers. For each problem, solve it using a number line, a model, and an equation. For each model, color in the minuend one color and use a pencil to cross off the subtrahend.

1. $4\frac{3}{4} - 2\frac{1}{4}$

**Number line:**

**Model:**

**Equation:** ______________________________

2. $5 - 2\frac{1}{4}$

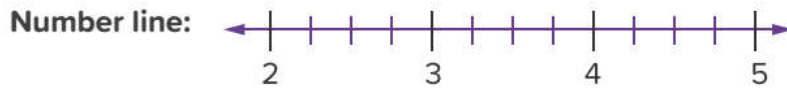
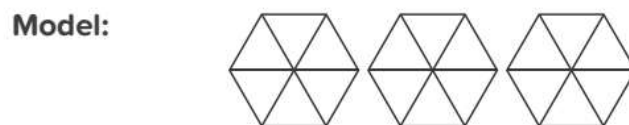
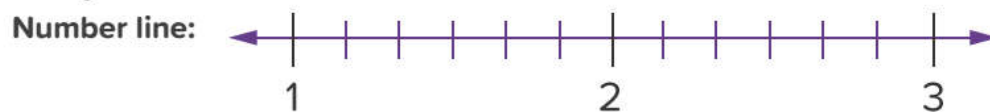
**Number line:**

**Model:**

**Equation:** ______________________________

3. $3 - 1\frac{1}{6}$

**Number line:**

**Model:**

**Equation:** ______________________________

## Add:

a) $1\frac{1}{5} + 2\frac{2}{5} =$ ..............................

b) $4\frac{3}{7} + 5\frac{4}{7} =$ ..............................

c) $6\frac{3}{8} + 2\frac{5}{8} =$ ..............................

d) $6\frac{3}{4} + 8\frac{3}{4} =$ ..............................

e) $3\frac{5}{8} + 2\frac{7}{8} =$ ..............................

## Subtract:

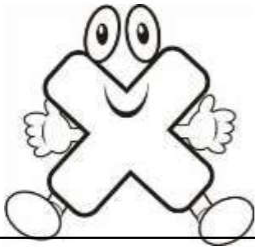
a) $5 - 2\frac{1}{7} =$ ..............................

b) $4\frac{3}{8} - 3\frac{1}{8} =$ ..............................

c) $6\frac{3}{7} - 1\frac{2}{7} =$ ..............................

d) $9\frac{3}{5} - 2\frac{4}{5} =$ ..............................

e) $8\frac{2}{9} - 3\frac{5}{9} =$ ..............................

# Homework

## MULTIPLICATION

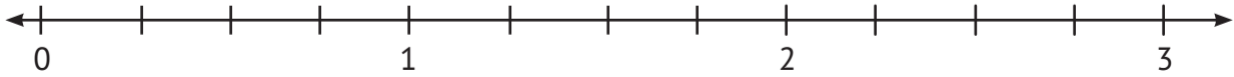
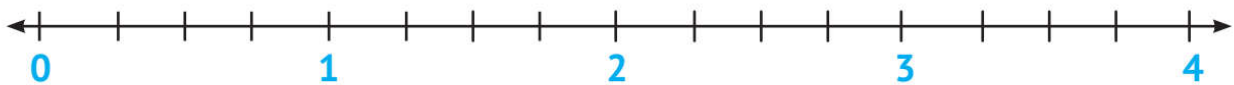
| | | |
|---|---|---|
| 5 × 7 = | 5 × 3 = | 5 × 4 = |
| 5 × 8 = | 5 × 2 = | 5 × 1 = |
| 5 × 5 = | 5 × 6 = | 5 × 0 = |

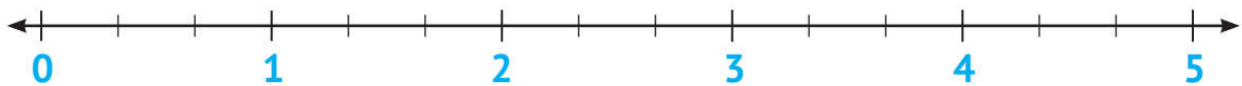
| | | |
|---|---|---|
| 6 × 3 = | 6 × 5 = | 6 × 4 = |
| 6 × 6 = | 6 × 0 = | 6 × 7 = |
| 6 × 2 = | 6 × 1 = | 6 × 9 = |

| | | |
|---|---|---|
| 5 × 2 = | 6 × 6 = | 6 × 7 = |
| 5 × 5 = | 5 × 3 = | 6 × 8 = |
| 5 × 2 = | 5 × 1 = | 6 × 9 = |

| | | |
|---|---|---|
| 6 × 8 = | 5 × 5 = | 5 × 7 = |
| 6 × 4 = | 6 × 9 = | 5 × 6 = |
| 5 × 3 = | 6 × 1 = | 6 × 4 = |

## Put each fraction in its suitable place on the number line:

$\frac{3}{4}$ ، $2\frac{1}{4}$ ، $1\frac{2}{4}$ ، $\frac{1}{4}$ ، $2\frac{3}{4}$

$\frac{3}{4}$ ، $1\frac{3}{4}$ ، $2\frac{1}{4}$ ، $3\frac{2}{4}$

## Add using the number line:

**a)** $2\frac{1}{3} + 1\frac{1}{3} =$ ..............................

**b)** $3\frac{3}{4} + \frac{3}{4} =$ ..............................

**c)** $1\frac{2}{5} + 1\frac{4}{5} =$ ..............................

## Add:

$2\frac{3}{4} + 5 =$ ..........

$4\frac{3}{5} + 2\frac{1}{5} =$ ..........

$2\frac{3}{8} + 1\frac{4}{8} =$ ..........

$4\frac{4}{5} + 3\frac{1}{5} =$ ..........

$2\frac{6}{7} + \frac{1}{7} =$ ..........

$3\frac{5}{8} + 2\frac{3}{8} =$ ..........

$3\frac{5}{6} + \frac{3}{6} =$ ..........

$4\frac{3}{7} + 2\frac{6}{7} =$ ..........

$3\frac{5}{6} + 2\frac{5}{6} =$ ..........

## Subtract:

a) $5\frac{6}{7} - 2\frac{3}{7} =$ ..........

b) $9 - 1\frac{3}{7} =$ ..........

c) $5\frac{1}{4} - 2\frac{3}{4} =$ ..........

d) $9\frac{1}{5} - 2 =$ ..........

e) $4\frac{3}{4} - 1\frac{2}{4} =$ ..........

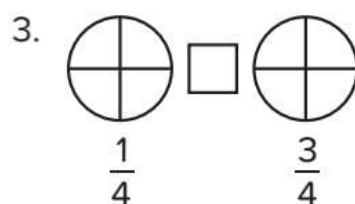
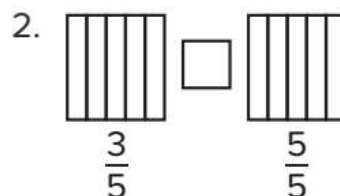
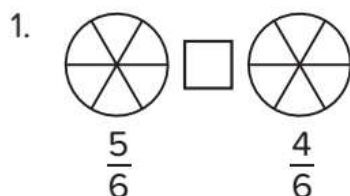
f) $8 - 5\frac{3}{8} =$ ..........

g) $6\frac{3}{8} - 1\frac{5}{8} =$ ..........

h) $6\frac{5}{8} - 3 =$ ..........

# Concept (2): Comparing Fractions

## [1] Comparing fractions with like denominators:

**Comparing Fractions with Like Denominators** Shade each shape to show the given fractions. Then, compare the fractions using the symbols <, >, or =.

1. 

$\frac{5}{6}$ ☐ $\frac{4}{6}$

2. 

$\frac{3}{5}$ ☐ $\frac{5}{5}$

3. 

$\frac{1}{4}$ ☐ $\frac{3}{4}$

4. Fill in the blanks to complete the statement.

If fractions have the same ______________, then the one with the ______________ numerator is the ______________ fraction.

5. Order the following fractions from least to greatest.

$\frac{6}{8}$ $\frac{2}{8}$ $\frac{5}{8}$ $\frac{3}{8}$ $\frac{7}{8}$ $\frac{1}{8}$ $\frac{8}{8}$

______; ______; ______; ______; ______; ______; ______

## Put the suitable relation (<), (>) or (=) in the blanks:

1.  ☐ 

2.  ☐ 

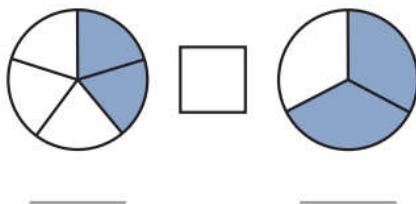
3.  ☐ 

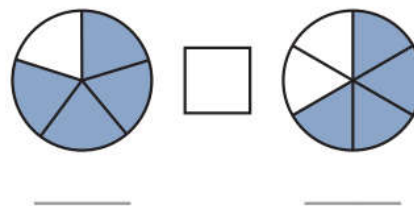
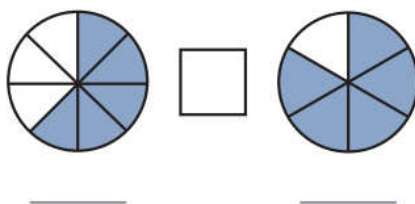
4.  ☐

## [2] Comparing fractions with like numerators:

**Comparing Fractions with Like Numerators** Write the fractions shown underneath each shape, and then compare each pair of fractions using the symbols <, >, or =.

1. 

______ ______

2. 

______ ______

3. 

______ ______

4. Fill in the blanks to complete the statement.

If fractions have the same ______________, then the one with the ______________ denominator is the ______________ fraction.

Write <, >, or = in each box to compare the two fractions.

5. $\frac{5}{6}$ ☐ $\frac{5}{8}$

6. $\frac{3}{6}$ ☐ $\frac{3}{4}$

7. $\frac{4}{8}$ ☐ $\frac{4}{5}$

8. Order the following fractions from least to greatest.

$\frac{3}{5}$ $\frac{3}{8}$ $\frac{3}{3}$ $\frac{3}{6}$ $\frac{3}{12}$

______; ______; ______; ______; ______

## PRACTICE

Compare the fractions using greater than ( > ) or less than ( < ), and then order them from least to greatest.

1. $\frac{4}{8}$ ☐ $\frac{1}{8}$ $\frac{7}{8}$ ☐ $\frac{3}{8}$ $\frac{2}{8}$ ☐ $\frac{6}{8}$

_____; _____; _____; _____; _____; _____

2. $\frac{4}{1}$ ☐ $\frac{4}{5}$ $\frac{4}{8}$ ☐ $\frac{4}{4}$ $\frac{4}{9}$ ☐ $\frac{4}{10}$

_____; _____; _____; _____; _____; _____

3. Hady and Hala were playing soccer. Hady made $\frac{2}{3}$ of his shots. Hala made $\frac{2}{4}$ of his shots. If they took the same number of shots, who made more shots?

Shorouk, Yahia, and Ziad each bought one bar of chocolate. On the way home, Shourouk ate $\frac{2}{15}$ of hers, Yahia ate $\frac{7}{15}$ of his, and Ziad ate $\frac{4}{15}$ of his. The next day, Shourouk had another $\frac{7}{15}$, Yahia ate another $\frac{8}{15}$ and Ziad ate another $\frac{10}{15}$.

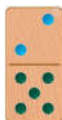
4. How much chocolate did each person eat in all?

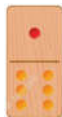
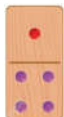
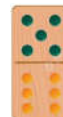
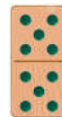
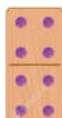
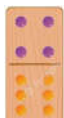
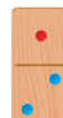
5. How much chocolate do they each have left?

6. Who has the most chocolate left?

7. Who has the least chocolate left?

# Put the suitable relation (<), (>) or (=) in the blanks:

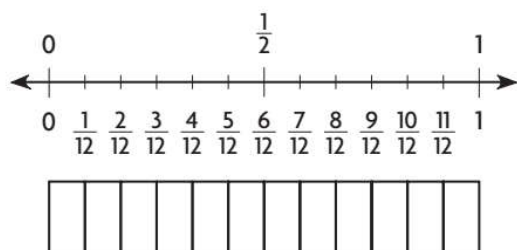
**1.**  ☐ 

**2.**  ☐ 

**3.**  ☐ 

**4.**  ☐ 

**5.**  ☐ 

**6.**   ☐ 

**Benchmarks** A **benchmark** is a known size or amount that helps you understand a different size or amount. You can use $\frac{1}{2}$ as a benchmark to help you compare fractions.

## Example Use benchmarks to compare fractions.

A family hiked the same mountain trail. Evie and her father hiked $\frac{5}{12}$ of the trail before they stopped for lunch. Jill and her mother hiked $\frac{9}{10}$ of the trail before they stopped for lunch. Who hiked farther before lunch?

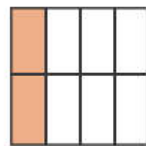
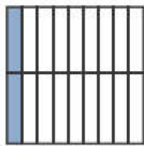
Compare $\frac{5}{12}$ and $\frac{9}{10}$ to the benchmark $\frac{1}{2}$.

**STEP 1** Compare $\frac{5}{12}$ to $\frac{1}{2}$.

Think: Shade $\frac{5}{12}$.

$\frac{5}{12}$ ◯ $\frac{1}{2}$

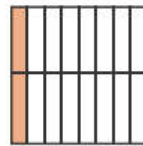
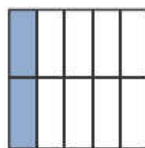
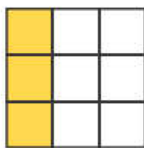
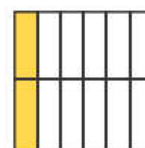
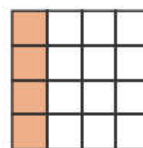
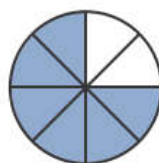
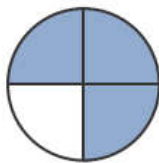
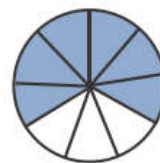
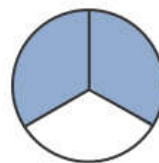
**STEP 2** Compare $\frac{9}{10}$ to $\frac{1}{2}$.

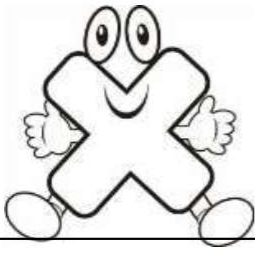
Think: Shade $\frac{9}{10}$.

$\frac{9}{10}$ ◯ $\frac{1}{2}$

Since $\frac{5}{12}$ is ____________ than $\frac{1}{2}$ and $\frac{9}{10}$ is ____________ than $\frac{1}{2}$, you know that $\frac{5}{12}$ ◯ $\frac{9}{10}$.

So, ______________________ hiked farther before lunch.

Circle the fraction that is equivalent.

Circle the fraction that is equivalent.

Circle the fraction that is equivalent.

Circle the fraction that is equivalent.

Record the equivalent fraction in the second model.

$\frac{3}{4} = \frac{\quad}{8}$

$\frac{2}{3} = \frac{\quad}{9}$

# Homework

MULTIPLICATION

| | | |
|---|---|---|
| 7 × 3 = ☐ | 7 × 5 = ☐ | 7 × 4 = ☐ |
| 7 × 6 = ☐ | 7 × 0 = ☐ | 7 × 7 = ☐ |
| 7 × 2 = ☐ | 7 × 1 = ☐ | 7 × 9 = ☐ |

| | | |
|---|---|---|
| 5 × 7 = ☐ | 5 × 3 = ☐ | 5 × 4 = ☐ |
| 5 × 8 = ☐ | 5 × 2 = ☐ | 5 × 1 = ☐ |
| 5 × 5 = ☐ | 5 × 6 = ☐ | 5 × 0 = ☐ |

| | | |
|---|---|---|
| 5 × 2 = ☐ | 7 × 6 = ☐ | 7 × 7 = ☐ |
| 5 × 5 = ☐ | 5 × 3 = ☐ | 5 × 8 = ☐ |
| 7 × 2 = ☐ | 7 × 1 = ☐ | 7 × 9 = ☐ |

| | | |
|---|---|---|
| 5 × 8 = ☐ | 7 × 5 = ☐ | 5 × 7 = ☐ |
| 5 × 4 = ☐ | 5 × 9 = ☐ | 5 × 6 = ☐ |
| 7 × 3 = ☐ | 5 × 1 = ☐ | 7 × 4 = ☐ |

## [1] Put the suitable relation (<), (>) or (=) in the blanks:

(1) $\frac{1}{5}$ ☐ $\frac{4}{5}$

(2) $\frac{9}{10}$ ☐ $\frac{3}{10}$

(3) $2\frac{7}{9}$ ☐ $2\frac{5}{9}$

(4) $3\frac{2}{5}$ ☐ $\frac{7}{5}$

(5) $\frac{3}{4}$ ☐ $\frac{1}{4}$

(6) $\frac{5}{9}$ ☐ $\frac{4}{9}$

(7) $2\frac{1}{8}$ ☐ $\frac{17}{8}$

(8) $\frac{3}{7}$ ☐ $\frac{4}{7}$

## [2] Put the suitable relation (<), (>) or (=) in the blanks:

(1) $\frac{3}{4}$ ☐ $\frac{3}{5}$

(2) $\frac{2}{8}$ ☐ $\frac{2}{4}$

(3) $2\frac{7}{9}$ ☐ $2\frac{7}{8}$

(4) $\frac{1}{7}$ ☐ $\frac{1}{3}$

(5) $\frac{8}{25}$ ☐ $\frac{8}{13}$

(6) $2\frac{1}{2}$ ☐ $2\frac{1}{9}$

## [3] Arrange each of the following numbers:

(1) $\frac{2}{11}, \frac{7}{11}, \frac{4}{11}, \frac{10}{11}$

**Ascending order:** ..............................................................................................

(2) $\frac{13}{7}, \frac{5}{7}, \frac{9}{7}, \frac{4}{7}, \frac{11}{7}$

**Descending order:** ..............................................................................................

(3) $\frac{2}{10}, \frac{9}{10}, \frac{14}{10}, 0.5, \frac{7}{10}$

**Ascending order:** ..............................................................................................

**(4)** $\frac{5}{9}$ , 1 , $\frac{2}{9}$ , $\frac{7}{9}$

**Descending order:** ..............................

## [4] Arrange each of the following numbers:

**(1)** $\frac{7}{13}$ , $\frac{7}{5}$ , $\frac{7}{9}$ , $\frac{7}{4}$ , $\frac{7}{11}$

**Ascending order:** ..............................

**(2)** $\frac{12}{5}$ , $\frac{12}{7}$ , $\frac{12}{17}$ , $\frac{12}{13}$ , $\frac{12}{15}$

**Descending order:** ..............................

**(3)** $\frac{2}{5}$ , $\frac{2}{3}$ , 1 , $\frac{2}{10}$ , $\frac{2}{8}$

**Descending order:** ..............................

**GO DEEPER** Angie, Blake, Carlos, and Daisy went running. Angie ran $\frac{1}{3}$ mile, Blake ran $\frac{3}{5}$ mile, Carlos ran $\frac{7}{10}$ mile, and Daisy ran $\frac{1}{2}$ mile. Which runner ran the shortest distance? Who ran the longest distance?

______________________

**THINK SMARTER** Elaine bought $\frac{5}{8}$ pound of potato salad and $\frac{4}{6}$ pound of macaroni salad for a picnic. Use the numbers to compare the amounts of potato salad and macaroni salad Elaine bought.

$\frac{\square}{\square} < \frac{\square}{\square}$

4

5

6

8

## [5] Put the suitable relation (<), (>) or (=) in the blanks:

1.   

2.   

3.  

4.   

5.  

6.   

7.  

8.   

9.   

10.   

**Tell whether the fractions are equivalent. Write = or ≠.**

3. $\frac{1}{6}$ ◯ $\frac{2}{12}$
4. $\frac{2}{5}$ ◯ $\frac{6}{10}$
5. $\frac{4}{12}$ ◯ $\frac{1}{3}$
6. $\frac{5}{8}$ ◯ $\frac{2}{4}$
7. $\frac{5}{6}$ ◯ $\frac{10}{12}$
8. $\frac{1}{2}$ ◯ $\frac{5}{10}$

THINK SMARTER For numbers 12a–12d, tell whether the fractions are equivalent by selecting the correct symbol.

12a. $\frac{3}{15}$ [= / ≠] $\frac{1}{6}$

12b. $\frac{3}{4}$ [= / ≠] $\frac{16}{20}$

12c. $\frac{2}{3}$ [= / ≠] $\frac{8}{12}$

12d. $\frac{8}{10}$ [= / ≠] $\frac{4}{5}$

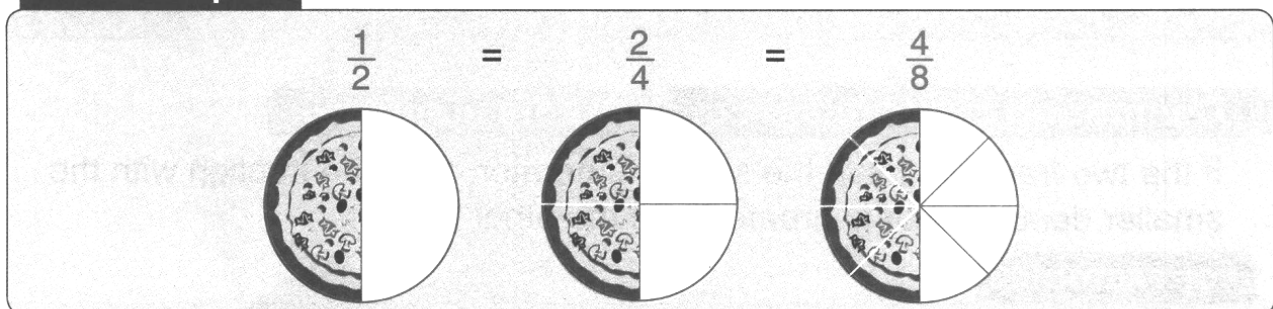
# Concept (3)
# Multiplication and Fractions

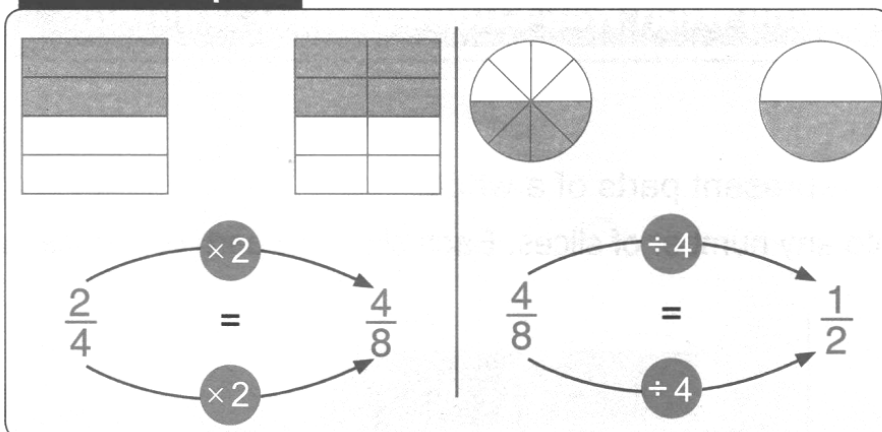
**Identity Property Review** Solve each problem. Then, circle the problems that show the Identity Property of Multiplication.

1. $45 \times 1 =$ ____________
2. $1 \times 34{,}953 =$ ____________
3. $\frac{2}{3} \times 1 =$ ____________
4. $0 \times 4 =$ ____________
5. $1 \times \frac{4}{5} =$ ____________
6. $\frac{1}{1} \times \frac{1}{8} =$ ____________
7. $\frac{3}{7} \times \frac{4}{4} =$ ____________
8. $\frac{5}{6} \times 0 =$ ____________

## Equivalent fractions

- Some fractions may look different, but are really the same.

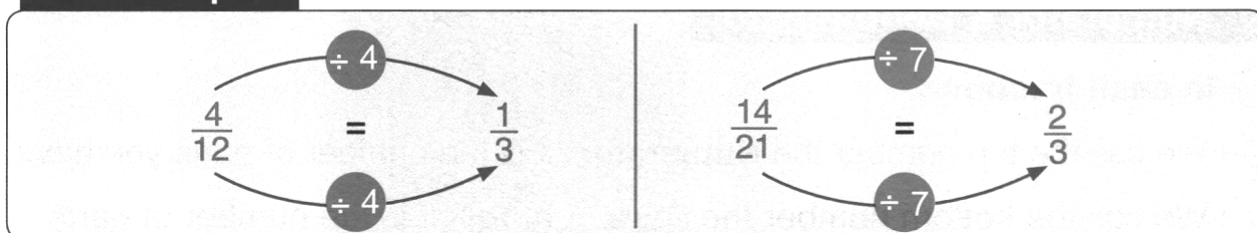
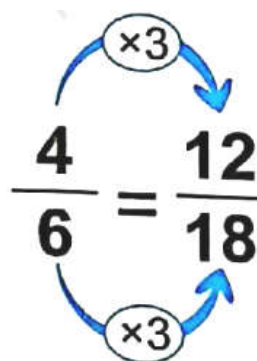
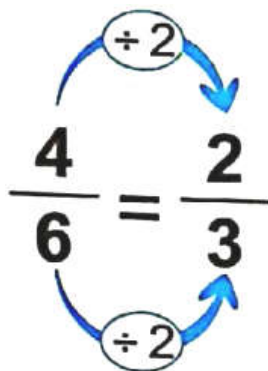
**For example :**

- To find equivalent fractions , multiply or divide both of the numerator and the denominator by the same number (other than zero).

**For example :**

**Important :**

You only multiply or divide, never add or subtract, to get an equivalent fraction.

## Simplifying the fractions

To reduce (simplify) a fraction to its simplest form, we divide each of the numerator and the denominator by the greatest possible common number.

**For example :**

**Example:** Write two fractions equivalent to $\frac{4}{6}$ .

**From Parts to a Whole** Use the fraction wall to answer the questions.

$1$

$\frac{1}{2}$ $\frac{1}{2}$

$\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$

$\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$

$\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$ $\frac{1}{5}$

$\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$

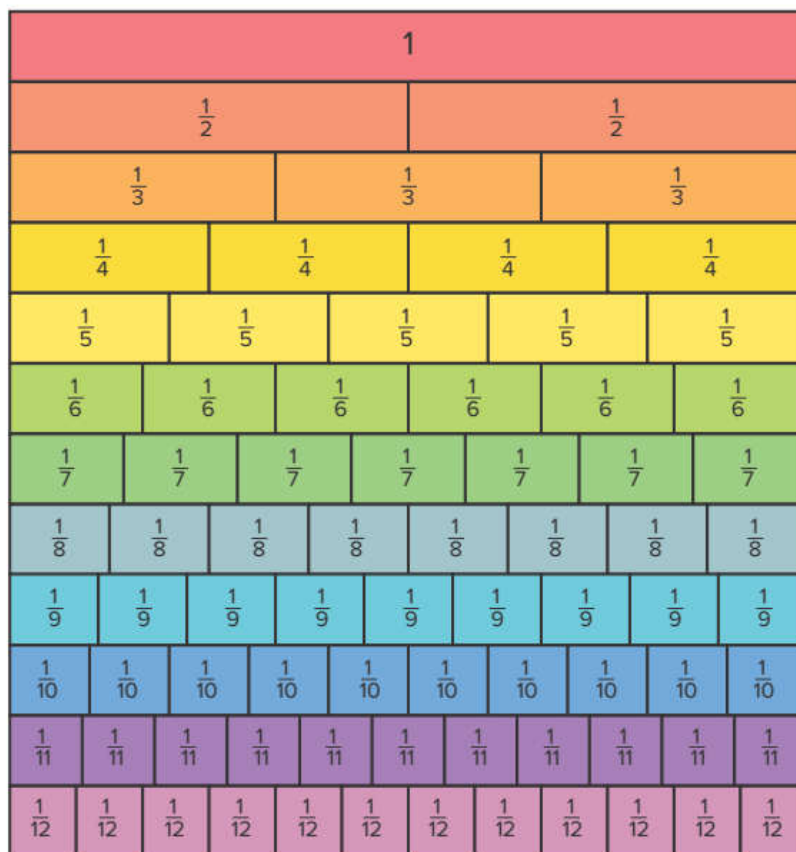
$\frac{1}{7}$ $\frac{1}{7}$ $\frac{1}{7}$ $\frac{1}{7}$ $\frac{1}{7}$ $\frac{1}{7}$ $\frac{1}{7}$

$\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$

$\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$

$\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$ $\frac{1}{10}$

$\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$

$\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$

1. How many halves are in 1 whole? Using halves, how would you write 1 whole as a fraction?

2. How many fourths are in 1 whole? Using fourths, how would you write 1 whole as a fraction?

3. How many tenths are in 1 whole? Using tenths, how would you write 1 whole as a fraction?

**Multiplying to Create Equivalent Fractions** Follow your teacher's directions to solve the problems.

1. How many ways can you show 1 (one whole) as a fraction? Write as many as you can in the time allowed.

Generate at least 5 equivalent fractions for each fraction.

2. $\frac{2}{3}$; ________; ________; ________; ________; ________

3. ________; $\frac{2}{4}$; ________; ________; ________; ________

4. $\frac{3}{5}$; ________; ________; ________; ________; ________

5. ________; ________; $\frac{3}{9}$; ________; ________; ________

**Dividing to Create Equivalent Fractions** Follow your teacher's directions to solve the problems.

1. $\frac{15}{20}$ is equivalent to $\frac{3}{4}$. How can you use division to prove it?

Determine whether each fraction pair is equivalent. If it is, write "true." If it is not, write "false."

2. $\frac{2}{3} = \frac{6}{9}$ ________
3. $\frac{7}{8} = \frac{2}{3}$ ________
4. $\frac{3}{5} = \frac{6}{8}$ ________
5. $\frac{6}{10} = \frac{2}{5}$ ________
6. $\frac{2}{8} = \frac{1}{4}$ ________
7. $\frac{9}{12} = \frac{2}{4}$ ________
8. $\frac{3}{8} = \frac{1}{6}$ ________
9. $\frac{1}{3} = \frac{4}{12}$ ________

## Look at the first fraction in each row. Circle the equivalent fractions. Cross out the ones that are not equivalent:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | $\frac{1}{2}$ | $\frac{3}{6}$ | $\frac{6}{12}$ | $\frac{4}{9}$ | $\frac{6}{10}$ | $\frac{4}{8}$ | $\frac{7}{14}$ | $\frac{6}{11}$ |
| 2 | $\frac{2}{3}$ | $\frac{1}{4}$ | $\frac{8}{12}$ | $\frac{4}{6}$ | $\frac{5}{5}$ | $\frac{6}{9}$ | $\frac{7}{15}$ | $\frac{4}{10}$ |
| 3 | $\frac{3}{4}$ | $\frac{9}{12}$ | $\frac{2}{3}$ | $\frac{15}{20}$ | $\frac{4}{8}$ | $\frac{6}{8}$ | $\frac{12}{16}$ | $\frac{9}{10}$ |
| 4 | $\frac{4}{5}$ | $\frac{8}{10}$ | $\frac{12}{16}$ | $\frac{14}{15}$ | $\frac{16}{20}$ | $\frac{4}{9}$ | $\frac{12}{15}$ | $\frac{20}{25}$ |

**What Is the Missing Multiple?** Work with a partner to identify the missing numerator or denominator for the equivalent fractions.

1. $\frac{3}{4} = \frac{\square}{12}$

2. $\frac{5}{15} = \frac{15}{\square}$

3. $\frac{20}{25} = \frac{\square}{5}$

Find the missing numerator or denominator to make the fractions equivalent. Record what factor you multiplied or divided by. An example is shown.

$\frac{2}{5} = \frac{\quad}{20}$ (× above, × below)

4. $\frac{5}{7} = \frac{\square}{21}$ (× above, × below)

5. $\frac{2}{9} = \frac{10}{\square}$ (× above, × below)

6. $\frac{12}{18} = \frac{4}{\square}$

7. $\frac{10}{70} = \frac{\square}{7}$

8. $\frac{7}{13} = \frac{21}{\square}$

9. Heba had two cakes that were the same size. She cut the first cake into 6 pieces and frosted 2 of the pieces blue. She cut the second cake into 18 pieces. If she wanted to frost the same fraction of the second cake blue, how many pieces should she frost? How do you know? Draw a fraction model if necessary.

Different Kinds of Cookies

10. Nabil had 9 cookies. $\frac{2}{3}$ of them were chocolate chip. How many cookies were chocolate chip? (Hint: $\frac{2}{3} = \frac{?}{9}$)

# ACCESS

Pack of Dogs

### Doggy, Doggy, Where Is Your Bone?

Discuss the story problem that follows with your Shoulder Partner. Work together and use a bar model to solve the problem. Then, write an addition and a multiplication sentence.

Omar has 6 dogs. Each dog chews 2 bones a day. How many bones does Omar need each day to give his dogs?

**Bar Model:**

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |

**Addition sentence:** ______________________

**Multiplication sentence:** ______________________

1. Two of Omar's dogs are at the vet. He has 6 bones in his bag for his evening dog walk. Shade the boxes to show how many bones Omar will give to the dogs that are with him.

2. Represent your shaded bar model as a fraction.

3. Decompose $\frac{4}{6}$ as the sum of unit fractions.

4. Express $\frac{4}{6}$ using multiplication.

5. Draw a bar model and write an addition and multiplication sentence for $\frac{2}{5}$.

**Bar model:**

**Addition sentence:** ______________________

**Multiplication sentence:** ______________________

6. Draw a bar model and write an addition and multiplication sentence for $\frac{5}{8}$.

**Bar model:**

**Addition sentence:** ______________________

**Multiplication sentence:** ______________________

**Adding and Subtracting Fractions** Solve the problems. Show your work.

1. $\frac{1}{5} + \frac{2}{5} + \frac{1}{5} =$ __________
2. $\frac{3}{8} + \frac{1}{8} + \frac{3}{8} =$ __________
3. $\frac{5}{12} + \frac{2}{12} + \frac{6}{12} =$ __________
4. $\frac{6}{9} - \frac{5}{9} =$ __________
5. $\frac{12}{15} - \frac{5}{15} =$ __________
6. $1 - \frac{2}{5} =$ __________

Heba is making pancake batter. The recipe calls for $\frac{5}{8}$ of a jug of milk, and she only has $\frac{2}{8}$ of a jug of milk. How much more milk does Heba need to make the pancake batter?

What do I know? ____________________

Kareem runs to train for the big race. On Monday he runs $\frac{4}{2}$ kilometer, on Wednesday he runs $\frac{1}{2}$ kilometer, and on Friday he runs $\frac{6}{2}$ kilometer. How many kilometers did Kareem run in all?

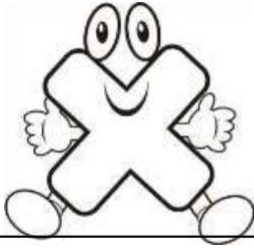
What do I know? ____________________

Samira and her family are celebrating her birthday with cake. They cut the cake into 8 equal slices. If Samira, her mom, her dad, and her brother each have 1 slice of the cake, what fraction of the cake is left?

What do I know? ____________________

Over the course of a week, Adam drank $1\frac{3}{4}$ liters of juice and Omar drank $1\frac{7}{8}$ liters of juice. Who drank more?

What do I know? ____________________

# Homework

## MULTIPLICATION

| | | |
|---|---|---|
| 6 × 7 = ☐ | 6 × 3 = ☐ | 6 × 4 = ☐ |
| 6 × 8 = ☐ | 6 × 2 = ☐ | 6 × 1 = ☐ |
| 6 × 5 = ☐ | 6 × 6 = ☐ | 6 × 0 = ☐ |

| | | |
|---|---|---|
| 7 × 4 = ☐ | 7 × 3 = ☐ | 7 × 5 = ☐ |
| 7 × 7 = ☐ | 7 × 6 = ☐ | 7 × 0 = ☐ |
| 7 × 9 = ☐ | 7 × 2 = ☐ | 7 × 1 = ☐ |

| | | |
|---|---|---|
| 6 × 8 = ☐ | 7 × 5 = ☐ | 6 × 7 = ☐ |
| 6 × 4 = ☐ | 6 × 9 = ☐ | 6 × 6 = ☐ |
| 7 × 3 = ☐ | 6 × 1 = ☐ | 7 × 4 = ☐ |

| | | |
|---|---|---|
| 6 × 2 = ☐ | 7 × 6 = ☐ | 7 × 7 = ☐ |
| 6 × 5 = ☐ | 6 × 3 = ☐ | 6 × 8 = ☐ |
| 7 × 2 = ☐ | 7 × 1 = ☐ | 7 × 9 = ☐ |

## Look at the first fraction in each row. Circle the equivalent fractions. Cross out the ones that are not equivalent:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | $\frac{1}{6}$ | $\frac{1}{4}$ | $\frac{2}{10}$ | $\frac{3}{18}$ | $\frac{5}{30}$ | $\frac{2}{12}$ | $\frac{4}{24}$ | $\frac{4}{12}$ |
| 2 | $\frac{3}{7}$ | $\frac{9}{21}$ | $\frac{6}{14}$ | $\frac{12}{28}$ | $\frac{6}{12}$ | $\frac{5}{21}$ | $\frac{7}{14}$ | $\frac{13}{35}$ |
| 3 | $\frac{5}{8}$ | $\frac{3}{10}$ | $\frac{20}{32}$ | $\frac{10}{16}$ | $\frac{15}{20}$ | $\frac{16}{24}$ | $\frac{15}{24}$ | $\frac{5}{9}$ |

## Complete:

a) $\frac{1}{2} = \frac{5}{\dots\dots}$

b) $\frac{5}{15} = \frac{\dots\dots}{3}$

c) $\frac{3}{5} = \frac{9}{\dots\dots}$

d) $\frac{8}{9} = \frac{48}{\dots\dots}$

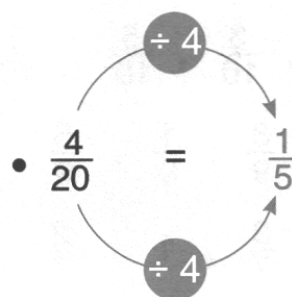
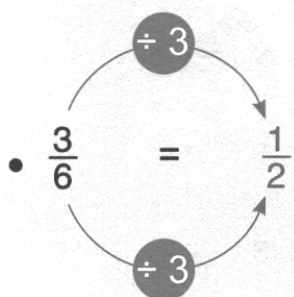
e) $\frac{16}{18} = \frac{\dots\dots}{9}$

f) $\frac{5}{7} = \frac{30}{\dots\dots}$

g) $\frac{\dots\dots}{13} = \frac{4}{26}$

h) $\frac{\dots\dots}{9} = \frac{32}{72}$

## Simplify as the example:

**Example :**

a) $\frac{5}{10} = \frac{\dots\dots}{\dots\dots}$

b) $\frac{2}{6} = \frac{\dots\dots}{\dots\dots}$

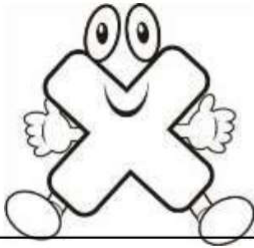
c) $\frac{6}{12} = \frac{\dots\dots}{\dots\dots}$

d) $\frac{6}{9} = \frac{\dots\dots}{\dots\dots}$

e) $\frac{5}{20} = \frac{\dots\dots}{\dots\dots}$

f) $\frac{6}{21} = \frac{\dots\dots}{\dots\dots}$

## Complete to get equivalent fractions:

| | | | |
|---|---|---|---|
|  ×4 $\frac{5}{8} = \frac{\dots}{\dots}$ ×4 | ÷3 $\frac{3}{18} = \frac{\dots}{\dots}$ ÷3 | ×6 $\frac{1}{9} = \frac{\dots}{\dots}$ ×6 |  ×2 $\frac{2}{6} = \frac{\dots}{\dots}$ ×2 |
|  ÷7 $\frac{14}{35} = \frac{\dots}{\dots}$ ÷7 | ÷5 $\frac{10}{15} = \frac{\dots}{\dots}$ ÷5 | ×8 $\frac{7}{9} = \frac{\dots}{\dots}$ ×8 |  ÷4 $\frac{16}{32} = \frac{\dots}{\dots}$ ÷4 |
|  ×4 $\frac{20}{30} = \frac{\dots}{\dots}$ ×4 | ÷11 $\frac{33}{44} = \frac{\dots}{\dots}$ ÷11 |  ×7 $\frac{6}{12} = \frac{\dots}{\dots}$ ×7 |  ÷8 $\frac{24}{40} = \frac{\dots}{\dots}$ ÷8 |
|  ÷.... $\frac{20}{45} = \frac{4}{\dots}$ ÷.... | ×.... $\frac{2}{7} = \frac{\dots}{35}$ ×.... |  ×.... $\frac{3}{8} = \frac{24}{\dots}$ ×.... |  ÷.... $\frac{12}{24} = \frac{2}{\dots}$ ÷.... |
|  ×.... $\frac{4}{9} = \frac{\dots}{18}$ ×.... | ÷.... $\frac{21}{35} = \frac{\dots}{5}$ ÷.... | ÷.... $\frac{16}{20} = \frac{\dots}{10}$ ÷.... | ×.... $\frac{3}{4} = \frac{\dots}{32}$ ×.... |

# MULTIPLICATION

4 × 3 = ☐ 4 × 5 = ☐ 4 × 4 = ☐
4 × 6 = ☐ 4 × 0 = ☐ 4 × 7 = ☐
4 × 2 = ☐ 4 × 1 = ☐ 4 × 9 = ☐

8 × 7 = ☐ 8 × 3 = ☐ 8 × 4 = ☐
8 × 8 = ☐ 8 × 2 = ☐ 8 × 1 = ☐
8 × 5 = ☐ 8 × 6 = ☐ 8 × 0 = ☐

8 × 2 = ☐ 4 × 6 = ☐ 4 × 7 = ☐
8 × 5 = ☐ 8 × 3 = ☐ 8 × 8 = ☐
4 × 2 = ☐ 4 × 1 = ☐ 4 × 9 = ☐

8 × 8 = ☐ 4 × 5 = ☐ 8 × 7 = ☐
8 × 4 = ☐ 8 × 9 = ☐ 8 × 6 = ☐
4 × 3 = ☐ 8 × 1 = ☐ 4 × 4 = ☐